SunBriteTV 4610HD

46-Inch 1080p Outdoor LCD HDTV

Mike Marks

Most of our equipment reviews focus on the indoor home theatre environment, where lighting and climate are carefully controlled. For serious home theatre enthusiasts, this is our preferred way to watch a movie. However, there are a lot of opportunities for TV viewing in more casual settings. Someone with a pool might want to catch a ball game while enjoying the summer sun on the deck. You might consider moving a flat panel outdoors on nice days and bringing it back inside when inclement weather threatens, but that would get old rather quickly. Some summertime storms pop up so quickly that you barely have time to get yourself back inside, let alone disconnect and haul a heavy HDTV in as well. In these cases, a permanently mounted television outdoors is greatly preferred. Most consumer-grade models are not designed to withstand the elements. While custom enclosures are possible to protect the HDTV, why not start instead with a model designed from the ground up for outdoor use? This is where SunBriteTV comes in. Their mission, starting in 2004, was to design an HDTV that could stay out in the rain and withstand temperature extremes, dirt, insects, and UV rays. Their new Pro Line 4610HD outdoor television ($4,295) includes an air-flow system to protect against extreme heat and an internal heater that allows operation to -24 degrees F. Like their other outdoor HDTVs, this model is 2D only and lacks Internet capability.

Overview

As soon as you remove the top to the box it is apparent that this is no ordinary 46-inch LCD. That is further confirmed as you feel the almost 87 pounds of weight when setting it up. This model is built like a tank. With a slightly greater than 5-inch depth, we're not looking at any candidate for the thinnest model, either. What is immediately apparent from the heavy, black-powder-coated finish to the oversized mounting screws and gasketed rear panel input cover is that this model is built to take whatever Mother Nature throws at it, barring a tornado or hurricane. There is a second outer glass cover to protect the screen. The front has an effective anti-reflective coating that offers a dull matte reflection rather than the glossy reflections seen on many indoor HDTVs. With full room lights on, I saw only a vague hint of any reflections in the front.

Outdoor mounting options vary widely; therefore, the unit is shipped without any stand. A tabletop stand is available and was my choice for review because I wanted to easily move the TV between various lighting conditions. While the HDTV can easily handle being outdoors all the time in a Cleveland winter, I'm afraid I cannot, so most of the testing was conducted indoors. Available mounting options also include an articulating wall mount ($465), a fixed wall mount ($195), ceiling mounts ($425), or a pole mount (price not listed). The HDTV loudspeakers come separately, and you must attach them to the bottom of the HDTV before mounting. I was looking for a separate bag of screws to attach the stand, but it turns out all of the needed screws are already in the unit. Mounting screws were considerably larger and heavier than I'm used to seeing on indoor models, again reflecting SunBriteTV's care in designing a strong and secure mounting system that can withstand windy conditions.

All inputs are in the rear, behind a hinged cover with a thick weatherproof gasket. Three large thumbscrews secure the cover once you have made all of the desired connections. There is also a dust filter built into the back, similar to a furnace filter, and the manual recommends checking and replacing periodically, depending on your usage pattern and outdoor dust levels. A dust cover is available separately and recommended for further protection from the elements when the HDTV is not in use.

A side panel on the HDTV offers buttons for controlling the HDTV without a remote. Buttons are available for menu, channel, and volume control.

Remote

The remote differs from the usual HDTV remote by having a membrane over metal dome switch keys. Like the HDTV, it is weatherproof and can be left outdoors in the heat, snow, or rain, although the SunBriteTV representative told me that it is not fully waterproof and should, therefore, be left at the side of the hot tub or pool rather than taken into it. There is no backlighting. While I normally call a manufacturer out for this omission, it is definitely not needed for an HDTV that will primarily be used for outdoor daytime viewing. You might find navigation more difficult, however, if you're watching a late night game on the deck after the sun goes down.

All keys are clearly labeled, but I would have liked to see the channel and volume keys a little larger and easier to find by feel. Instead, they have the same round shape and size as the other keys. A small red indicator LED indicates when a key press is registered, which is helpful because the dome-switch keys do not have as solid of a tactile feel as traditional rubber buttons. Reception of remote commands was a little finicky, but that could be due to most of my testing being done on the floor. The manual mentions that the HDTV uses Sony remote

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codes if you are programming a cable box remote and cannot find SunBriteTV listed among HDTV manufacturers.

Manual

The supplied manual is thorough and includes clear diagrams as well as important safety notes specific to outdoor mounting. All menus are illustrated with full-sized photographs of the screen. I would also have liked to have seen diagrams illustrating the effect of each aspect ratio on the picture for 4:3 and 16:9 sources.

Heating And Cooling

The HDTV enclosure includes an internal heater that activates whenever the outside temperature is below 32 F and remains on until the internal temperature is 42 F or higher. For this reason, power must be available at all times when the HDTV is outdoors, even if it is not turned on. The manual recommends bringing the TV indoors if temperatures below -24 F are forecasted, but only a few viewers in the great white north need worry about those temperatures. Even Cleveland, well known for our harsh winters, very rarely gets below -5 F. Cooling fans take over when it gets too hot, and the unit is rated for temperatures up to 122 F. Only our readers in Death Valley need worry about reaching that extreme.

Connections

Unlike some indoor models that have up to four HDMI inputs, the 4610HD has only two HDMI inputs. There is a PC input, two YPbPr component video connections, one composite video connection, and an S-video connection. The S-video was a pleasant surprise; I have not seen one on a flat panel HDTV for about two or three years. Digital coaxial audio and a 3.5 mm miniplug for analog output are included. Antenna or cable connections are made with the single F connector supplied.

Tuner Performance

With standard rabbit ears connected, I was able to easily receive all digital broadcast channels in my area. This includes the weaker Fox affiliate, which has caused problems in the past, but in this instance I was reviewing the unit upstairs rather than in my below-grade basement. The scan process took about two to three minutes and a helpful progress bar showed how much was remaining.

Adjustments And Test Pattern Results

A standard menu system allows access to the usual user adjustments of contrast, brightness (black level), color, tint, and sharpness. Unlike many consumer LCD televisions, there was no “cell light” control, which adjusts the overall brightness of the picture. Careful adjustment of the brightness and contrast controls is necessary for the best picture. The default brightness level of 50/100 is too high and shows the below-black PLUGE bar on either the Accupel HDG-3000 generator or the *Spears & Munsil* test disc. It should be adjusted down to about 38 or 39 for best results. Likewise, the contrast control has enough headroom to lose a lot of white detail at the top end. I found a value of about 63/100 to be the highest I could go without losing the 98 IRE bar into a pure white field. At this setting the clipping pattern of *Spears & Munsil* still showed all of the steps for all three colors, so no further contrast reduction was necessary. The sharpness control appeared to have no effect, but I did not mind because no halos were visible on the test patterns.

Five default picture modes are provided: Standard, Theater, Vivid, Sports, and Custom. Once you make any changes to the picture controls, you have effectively selected Custom as the mode. I used Theater as the starting point for my adjustments. Adjustments are made on a per-input basis.

Three default color temperatures are available: warm, cool, and standard. Warm was the closest to correct at around 7800 K. A spot check of cool and standard showed them to be considerably further off at 11,100 and 12,600 respectively.

The luma and chroma zone plate patterns were excellent, with no extra moiré on the sides. The multiple cadence test in *Spears & Munsil* also showed excellent deinterlacing performance, with most patterns achieving a stable lock within 1/10 second or less. Single-pixel multiburst patterns were also clean and sharp with the default aspect ratio selected; there was no need to dig down into a menu to find a hidden pixel-by-pixel mode to achieve the best detail.

White field uniformity was good, with the corners being only slightly dimmer than the center by about 15 percent. What impressed me the most, however, was the sheer amount of light available from the 4610HD. After suitably adjusting the brightness and contrast controls, a full 100 IRE pattern clocked in an amazing 177 footLamberts (ft-L). This would be totally blinding in a darkened theatre room, but when competing with the sun and high ambient light outdoors, it is necessary. Even with this much light, the manual advises that the HDTV be mounted where direct sunlight does not impinge on the screen. A shaded area, such as under a gazebo or soffit, would be best.

The ANSI contrast ratio was about 890:1 despite the black squares' level being a little high at around 0.2 ft-L. In a darkened room, the black squares looked more grayish, but when I cranked up the lights the picture got better. This is one television that looks better when you throw more ambient light at it.

Gray Scale Measurement

I was able to measure the gray scale, but calibration requires a service code, which was not supplied before the review deadline. The

SPECIFICATIONS

Inputs – HDMI (2), Component (2), S-video (1), Composite (AV) (1), VGA PC input (D-sub) (1), Antenna/CATV (ATSC/QAM/NTSC) (1), L/R Audio Inputs (1)

Audio Out - TosLink Optical (1), Analog 1/8-Inch Headphone Jack (1)

Features
46-inch diagonal TFT Active Matrix LCD Screen
Contrast Ratio - 4000:1
Frame Rate - 60 Hz
Viewing Angle - 176 °x 176 °
Response Time - 8.0 milliseconds
TV formats - 1080p, 1080i, 720p, 480p, 480i
RS232 Serial - Discrete IR Control, Concealed IR Window
Speakers - 20 watt detachable loudspeaker module
Input Power - 100-240 VAC, 50-60 Hz 2.8 A Max
Operating Temp -40° to 122° F. (-31° to 50° C.)
Non-op. Temp -40° to 140° F. (-31° to 50° C.) *
(O. -mode with power applied) The non-operating temperature feature requires power to be applied
Weather-Proof Remote Control Included
Exterior is powder-coated aluminum in Black, Silver, White
Residential Warranty - Two-year parts and labor
Commercial Warranty - One-year parts and labor

Specifications
Dimensions (WxHxD) –
44.72 x 27.16 (29.33 with loudspeakers) x 5.24 (inch)
Weight – 86.8 lbs
MSRP – $4,295

Manufactured By:
SunBriteTV
2001 Anchor Court
Thousand Oaks, CA 91320
866.357.8688
http://www.sunbritetv.com

Warm color temperature setting measured around 7800 K once I got above the often-difficult 10 to 20 IRE region. Given the consistency of the x and y values from 30 to 100 IRE, I believe that I could have substantially improved the gray scale accuracy if I had received the calibration access code in time. Considering that the main application for this HDTV is casual outdoor viewing rather than critical viewing, I did not see the inaccuracy as being a huge problem, but purists might want to consider having the gray scale professionally adjusted. The representative from SunBriteTV mentioned that their models are optimized for outdoor viewing and offer fewer levels of manual adjustment than typically found in indoor models.

Advanced Settings Menu

The Advanced Settings menu under picture controls is relatively limited compared to most indoor HDTVs I have covered in the past. There is no Film Mode control, for example, but the deinterlacing tests of *Spears & Munsil* showed no problems in that area. There is a noise-reduction setting as well as adaptive contrast and overscan (on or off). The overscan setting defaults to off, and the adaptive contrast might prove useful in the outdoor setting when the angle of the sun changes throughout the day.

Aspect Ratio Control

The aspect ratio selections are found in the advanced video menu. Choices include Wide, Zoom, Cinema, and Normal. Zoom expands uniformly in both directions. Wide and Cinema appear to have the similar effects on a 16:9 source, Cinema zooms in slightly, whereas Wide keeps geometry intact. Normal fits the picture into a 4:3 area with black bars and is only useful if a 4:3 channel is being viewed. When an HDMI source is being viewed, only Wide and Normal are available.

Observations

As I mentioned earlier, I found that the picture got better when I had more ambient light. I would have liked to try it outdoors under full sun, but as any Cleveland astronomer knows, clear days (and nights) between November and April are rare indeed unless Lake Erie freezes over. Because our weather did not cooperate with any sunny days from the time I unboxed the 4610HD until press deadline, I performed all testing indoors in my dining room, which has a variety of lighting options, including dimmer wall sconces and a large, bright overhead light.

An HD broadcast of the American Giving Awards showed good shades of black and gray on the suits of the presenters. On a close-up of the audience, I noticed the thin lines of a couple of plaid shirts were clean and sharp. When fed a poor source, such as the low-quality video during a Ford commercial, the 4610HD was unforgiving and showed every motion and blocking artifact that was there to see. Finer details, such as the hair or razor stubble on some of the recipients, were good but perhaps a bit less sharp than the best indoor HDTVs can do.

On a Blu-ray™ of *Transformers: Dark Of The Moon*, I again noticed that more ambient light made the picture look better. With low lighting, space around the moon looked more grayish than pure black, but when I cranked up the room lights, the black looked better. Even with full room lighting on, the details and shadows of the Cybertron combat scenes popped out. The scene of the Apollo 11 astronauts exploring the crashed ship showed fine details of the lunar surface and sharp dust grains as they collapsed to reveal the robot face. Also, brighter daylight scenes still looked clear and bright, with deep blue skies. Letterbox bars also disappeared under bright lights, but were noticeably less than pure black if I kept the room lights low.

Conclusions

This is a specialized HDTV built and designed for a single purpose—to look good outdoors and be able to withstand the elements. There are many other choices that would be preferable for an indoor home theatre, but for now SunBriteTV owns the outdoor market. The lack of 3D support is a non-issue; who wants to mess around with glasses while chilling by the pool? Likewise, the absence of smart TV widgets and Internet capability does not really come into play because I suspect most outdoor viewing would be sporting events or casual movie viewing, and for these purposes the 4610HD excels. Under the brightest conditions I had available, I was able to enjoy a bright, clear picture with good color saturation. I was also impressed by the quality of construction and the attention to details such as the built-in heating and cooling and dust filtration. If you are looking to add a quality video display to your outdoor entertainment area, then SunBriteTV deserves a serious look. You'll also get the satisfaction of buying one of the few HDTVs actually made in America. WSR